

**IN THE CLAIMS:**

A complete listing of the claims is set forth below. Please amend the claims as follows:

1.-6. **(Canceled)**

7. **(Currently Amended)** A computer-implemented system ~~for redistributing a part~~, comprising one or more processing units operable to execute one or more software components to:

define a plurality of ~~locations~~; locations for redistributing a plurality of parts;

establish an actual inventory of a the plurality of parts among the plurality of locations;

establish a desired distribution of the plurality of parts among the plurality of locations;

determine a demand for each of the plurality of parts at each of the plurality of locations ~~location~~ using the actual inventory and the desired distribution;

add a one or more dummy ~~location~~; locations, each of the one or more dummy locations comprising a positive demand for attracting a plurality of excess parts;

determine a plurality of paths, a each path being operable to transfer a ~~part~~ at least one of the plurality of parts from one location to another location, wherein the plurality of paths include at least one path to the one or more dummy ~~location~~ locations that is associated with an infinite transfer cost;

generate a transfer function describing a cost of transferring a the plurality of excess parts along the plurality of paths; and

optimize the transfer function to achieve the desired distribution of the plurality of parts at minimum cost.

8. **(Currently Amended)** The system of Claim 7, wherein:

the transfer function further describes the cost being associated with transferring a ~~part~~ at least one of the plurality of parts along a plurality of alternative paths; and

the one or more processing units are further operable to execute the one or more software components ~~further~~ to optimize the transfer function by minimizing the transfer function.

9. **(Currently Amended)** The system of Claim 7, wherein the one or more processing units are further operable to execute the one or more software components ~~further~~ to determine the plurality of paths by sending a notification if there is no path between one location and another location.

10. **(Currently Amended)** The system of Claim 7, wherein the one or more processing units are further operable to execute the one or more software components ~~further~~ to establish the desired distribution by calculating an optimized distribution of the plurality of excess parts among the plurality of locations.

11. **(Currently Amended)** The system of Claim 7, wherein the one or more processing units are further operable to execute the one or more software components to add the one or more dummy ~~location~~ locations with an associated demand and the infinite transfer cost.

12. **(Currently Amended)** The system of Claim 7, wherein the one or more processing units are further operable to execute the one or more software components ~~further~~ to satisfy a constraint requiring that at least one of the plurality of parts transferred to a ~~location~~ at least one of the plurality of locations and at least one of the plurality of parts transferred from the ~~location~~ at least one of the plurality of locations satisfy the demand for each of the plurality of parts at each of the ~~location~~ plurality of locations.

13.-20. **(Canceled)**